Biodiversity Conservation & Economic Growth (BCEG) Project

Landscape Evaluation of the Territory within Rila Monastery NP

Report

Submitted by:
Petya Radovanova, Maria Samardjieva
BCEG Project Consultants

Bulgaria Biodiversity Conservation and Economic Growth Project

is a collaborative initiative between the

United States Agency for International Development
and the
Government of the Republic of Bulgaria

implemented by
Associates in Rural Development, Inc.

Project Number LAG-I-00-99-00013-00, Task Order 01

Table of Contents

Acronyms

ARD	Associates in Rural Development, Inc.
BCEG	Biodiversity Conservation and Economic Growth Project
BSS	Bulgarian State Standard
GEF	Global Environment Facility (note the acronym "GEF" is also used generically in Bulgaria for the USAID/GEF Biodiversity project)
GIS	Geographic Information System
MOEW	Ministry of Environment and Waters
MOU	Memorandum of Understanding
NNPS	National Nature Protection Service (of MOEW)
NP	Nature Park
PMU	Project Management Unit
QLE	Quick Landscape Evaluation
RMNP	Rila Monastery Nature Park
SG	State Gazette
UNESCO	United Nations Education, Scientific and Cultural Organization
USAID	United States Agency for International Development

Used Terms

Used term	Definition
Landscape	A territorial system containing interacting natural or natural and anthropogenic components and complexes of a lower taxonomical level.
Natural Landscape Components	The major landscape components: relief, soil, vegetation and animal world.
Landscape Protection	A system of events- administrative and legal, organizational and commercial, economic, technological, biological, educational and promotional- aimed at preserving, recovering and improving the implementation of major socio-economic functions of landscape.
Picturesqueness of Landscape	Vividness
Landscape Sustainability	The ability of landscape to sustain its structure and characteristics.
Landscape Deterioration	Irreversible changes to landscape
Representativeness of Landscape	Presence of characteristic features making landscape distinct from its surroundings.
Uniqueness of Landscape	Presence of unique elements or cultural and historical significance of landscape

Preface

The Biodiversity Conservation and Economic Growth (BCEG) Project is funded by the United States Agency for International Development, (USAID), as part of its strategic support to the Republic of Bulgaria. The Project is sponsored by USAID in conjunction with the Government of Bulgaria – the Ministry of Environment and Waters (MOEW). The Project is governed by a Memorandum of Understanding (MOU) between the two governments, and its implementation covers the period: May 2000 – March 2003.

This Project is a logical evolution of earlier USAID assistance to biodiversity conservation in the country. It follows some 10 years of assessment, technical assistance and financing of Bulgaria's biodiversity conservation strategic development, new protected areas legislation, and new national park institutions. The Project is designed to capitalize on the achievements of the Bulgaria Global Environmental Facility (GEF) Biodiversity Project (implemented during the period June 1995-April 2000), and builds on lessons learned.

The BCEG Project addresses six specific contract themes known as tasks or "contract result packages". The BCEG Project includes the finalization and implementation of two national park management plans, the development of a new management plan for Rila Monastery Nature Park. It assists in the development of financial mechanisms and strategies to ensure the solvency of national parks. The Project pilots economic growth activities with select target groups around two Bulgarian national parks. And it continues to build on the principles of strong public information and awareness as stepping stones for informed public engagement and promotion of biodiversity conservation and protected area management activities.

This Project is issued as a Task Order (Contract Number LAG-I-00-99-00013-00) under the USAID Global Biodiversity and Forestry Indefinite Quantities Contract (IQC); and is implemented on behalf of USAID by Associates in Rural Development, (ARD) Inc., of Burlington, Vermont, USA.

The Project is implemented through a Project Management Unit (PMU) based in Sofia, and includes a Team Leader, three Bulgarian technical specialists, and support staff. Project activities are coordinated through two mechanisms –

(a) Project Coordination Group – serves as a steering committee for Project planning and monitors implementation. This consists of the National Nature Protection Service of the MOEW, and national park directors, the PMU and USAID;
(b) Project Counterpart Team – PMU staff working with MOEW/NNPS counterparts.

The Project is largely implemented through the Directorates for Rila and Central Balkan National Parks. Additional technical assistance is provided by Bulgarian and international consultants, and is based on specific terms of reference.

1.0 Major Challenges in Landscape Evaluation

"*Indeed, Rila is the most magnificent of Bulgarian mountains ……"*
From Ivan Vazov's travel notes "The Great Rila Wilderness"

Usually, natural attractions are evaluated and proposed for protection without taking into consideration their aesthetic qualities. One of the greatest challenges in contemporary landscape planning is preserving "beautiful" landscapes. By "beautiful landscape" we assume "the complex ecological and aesthetic system of harmonious interrelations between wildlife, soils, water, man and planetary and climactic factors" (Dolgov). The main goal is to preserve, and if necessary, to reestablish "beautiful" landscapes. According to experts in the field, landscapes with distinct characteristics should be preserved, while construction of new sites and utilization of new free territories is done under a system of monitoring and control.

Unfortunately, in Bulgaria there is no objective methodology or standard in practice for implementing the concept of "aesthetic qualities" of landscape and "beautiful landscape". Recently however, there is a growing interest and focus on landscape conservation. The experience of experts in the field shows that an evaluation of the aesthetic qualities of landscape is pressing (Natural Resource Management 1977; Ulrich 1986). The guidelines for the management plan for Rila Monastery NP has a landscape evaluation objective incorporated, emphasizing on the effects of the aesthetic qualities of landscapes on visitors, and is one of the few positive examples in Bulgaria for evaluation of landscapes for the purpose of their preservation.

To draw out a list of criteria for verifying landscape qualities which would facilitate the development of a management plan for a specific protected territory is a difficult task (Clout 1972; Vroom 1986). The difficulties arise from the fact that however we look at a landscape, it can at the same time be classified in the way we perceive it visually and in a purely factual manner. Landscape evaluation in relation to perceptions is a difficult task also due to the uniqueness of individual perceptions and notions. The aesthetic evaluation of landscape depends on a number of subjective factors: season, time of day / night, illumination, mood of individuals, even whether they have had their meal or not. In order to assess the processes of evaluation, all aspects of human behavior should be taken into account.

According to a Russian study (www.ecoethics/beo2/15.html) some of the main criteria for aesthetic evaluation of landscape could possibly be as follows:

1. Relief- this is the variety of specific landscapes, availability of hills, vegetation and vantage points in depth and breadth.
2. Extent and character of forestation- types of forest, variety of transitions, alternations of forests and open spaces.
3. Availability of water sites- beautiful lakes, rivers and other water sources
4. Availability of natural attractions which bring in harmony and beauty - e.g. century-old trees, rock formations and characteristic cliffs.
5. Cultural and historic attractions- sites which successfully blend in with the natural landscape.
6. Presence of pleasing wildlife

7. Pristine state of landscape- clean air, rivers and lakes
8. Appealing sounds- (sound of a waterfall, roar of waves, singing of birds)
9. Pleasing Smells- the fragrance of flowers, forest and water

The literary sources (http://www.ecoethics/beo2/15.html) offer the following criteria for defining the aesthetic elements of a specific area: panoramic view, composition, contrast, number of elements under observation (detail). Usually, people show preference to natural sites with the following characteristics:

1. Complexity of picture (number of dissimilar / unrelated elements- medium complexity is preferred to great or small one)
2. Structure of image (preference to grouped rather than disorderly elements)
3. Focus- presence of beautiful spots, exceptionally/markedly/especially appealing,
4. Depth of scenery – positive characteristic;
5. Terrain (Flat landscape facilitates the movement of people and observation).
6. Lack of sense of danger- features bringing about a sense of danger block the feeling of delight that landscape invokes
7. Perspective- the line of the horizon is bent or distorted which helps contemplation.
8. Water – water is a major element improving the landscape quality.

Some of the above-mentioned criteria are the basis for Quick Landscape Evaluation (QLE) for Rila Monastery NP. Another important element in landscape evaluation that can contribute to prolonging the tourist season on the territory of Rila Monastery NP is examining the seasonal dynamism of landscape. For example, a given landscape of mixed forests might not have exceptionally high aesthetic qualities during the spring, but colors of fall can bring about total change. In light of this, a complete aesthetic evaluation can be made through a complex approach including: 1) population polls 2) determining sites depicted in folklore, literature and graphic arts. 3) defining the aesthetic value through a set of rules.

Regardless of the research method, summarizing the data from numerous research cycles for different resource types is a difficult task. For the needs of landscape evaluation of Rila Monastery NP the approach adopted is similar to the one used by the main planning team for the Management Plan in which the work process involved research of natural resources (hydrology, geology, forests, culture and tourism, socio-economic profile) and the results are shown textually and graphically. For the purpose of further interpretation the data gathered could be summarized and presented with the help of contemporary data processing and presentation technology (GIS).

2.0 Goals and Objectives of Landscape Evaluation

Planning and implementing landscape evaluation in any given area should not be an end in itself. Preservation of the park's beauties alone does not suffice- they must also be presented in a suitable fashion, in order to assist and educate in the perception of beauty. The specific goal of landscape evaluation is to gather information for landscapes from a visitor's viewpoint.

On the basis of international experience with landscape evaluation and national standards (BSS 17.8.1.02-89) a specific method has been developed for the purposes of quick landscape evaluation of Rila Monastery NP. A major concept is that of American research for preservation of unique territories and landscapes- such as the territory of Rila Monastery NP - its fundamental elements being the emotional and aesthetic as well as the cultural and ethic value of the landscape (http://www.ecoethics). The basis of landscape evaluation that has been adopted is the idea of overlapping the laws of ecology with laws of the aesthetic. The management plan has to take into consideration the specifics of the existing landscapes within the park as a unique example of unity between elements with exceptional natural beauty.

3.0 Work Method

Existing analysis and evaluation methods can be systematized in various ways. For the purposes of an exhaustive landscape evaluation a comprehensive approach is needed for establishing conditions for interdisciplinary cooperation in the field of landscape structures, including opinion polls. For the needs of landscape evaluation on the territory of Rila Monastery NP, a specific method for quick landscape evaluation has been developed. According to experts in the field this method belongs to the group of "visual methods". Visual evaluation of landscape is usually implemented for analysis and assessment of aesthetic qualities and individual landscape elements on the basis of aesthetic principles and criteria. Evaluation is done in two ways: on-the-spot and through a set of photographs of characteristic landscapes. Observation is made by professionals who make on-the-spot visits to the terrain. There should be at least two experts with good professional experience so that they can make objective analyses and evaluations regardless of their tiredness and mood (Troeva 1997). This approach to landscape evaluation is suitable for designers and future park managers to gather information about their clients' preferences and is appropriate for their good decision-making practice as managers, thus bringing landscape protection closer to the interests of client groups, park and government authorities.

Working landscape quality evaluation is divided in several major stages:

1. Identifying landscape components for the specific territory and classifying landscapes in a particular territory in accordance with existing standards and legislation *(Appendix 1)*.
2. Landscape evaluation. Data on the quality of the landscape is gathered in two ways:
   2.1 Terrain evaluation- evaluation of landscape qualities, on-the-spot filling in of questionnaires *(Appendix 2)*
   2.2 Landscape evaluation by photographs- quality evaluation of a given landscape is made by trained professionals- i.e. landscape designers- over a set of selected photographs which are representative of the area. This is done in a special questionnaire. *(Appendix 3)*
   Specialized questionnaires with several groups of questions have been developed for the purposes of terrain evaluation and evaluation by photographs. The questions differ for the two types of research. The complete text of the research form can be found in *Appendix 2* and *Appendix 3*.
3. Expert opinion on sorting a select number of factors by significance *(Appendix 4)*
4. A comprehensive grade evaluation of the landscapes under examination according to landscape quality factors *(Appendix 5)*.

The terrain evaluation of landscape identifies and evaluates characteristic and dominant features of the earth's surface- such as unusual rock formations, forest vegetation, rare animal and plant species, availability of tourist attractions and others.

Questions on terrain evaluation of landscape sites can be grouped in three major sets:

1. Set for evaluating landscape elements: rocks and rock formations, forests and shrubs, open spaces (meadows), water elements, wildlife, cultural and historic sites, infrastructure units, harmonious sounds and plan variety.

2. Set for evaluating landscape quality by indicators: picturesqueness, naturalness, stability, uniqueness, landscape diversity, representativeness, vulnerability, accessibility. Set for quality evaluation of landscape or of separate landscape elements.
3. Set for evaluating psychological response- positive and negative notions

The evaluation of landscape quality by photographs is carried out over a set of carefully selected photographs. The questionnaire for this evaluation is based primarily on the basic concepts and principals of landscape planning. Respondents are trained professionals with a common understanding of the terms in use. The questions are grouped in fourteen sets of indicators for the aesthetic qualities of landscape:

1. Emphatic (dominant) qualities;
2. Proportion (scale);
3. Space dynamism
4. Color
5. Seasonal color dynamism
6. Variety of perspective
7. Light and shade effects
8. Silhouette impact
9. Framing
10. General character of landscape
11. Uniqueness
12. Representativeness
13. Psychological response
14. General aesthetic evaluation

It is worth mentioning that seasonal dynamism of landscape is an important factor for the quality of landscape. Data for seasonal dynamism have not been collected since the QLE of Rila Monastery NP landscape provides for evaluations every other season – i.e. the summer of 2002.

The next step in evaluating existing landscapes is making the final evaluation for the quality of landscape. Qualified professionals- landscape designers with a wealth of professional experience in all fields of landscape planning- grade the landscape by level of importance through a select number of quality indicators *(Appendix 4)*. These grades are transposed over the general evaluation of the quality of each of the landscapes under examination. Each of the Rila Monastery NP landscape categories has a rank assigned for every individual component, the final step being sorting and gradation according to level of importance *(Appendix 7)*.

The summarized results from landscape evaluation on both levels are outlined and incorporated within the context of the Rila Monastery Natural Park management plan. Landscape zoning has been concluded. Zoning is implemented by two main criteria:

1. Quality of landscape;
2. By way of recommended use.

Finally, after analyzing the full amount of collected data, recommendations are made, while abiding by the main principle in approaching the issue of Rila Monastery NP management – protection of nature and landscape, as well as preserving the aesthetic perfection of nature unspoiled.

4.0 Major Types of Landscape within Park Territory

4.1 Summarized Landscape Structure

In view of contemporary morphogenetic processes, morphological complexes in the Rila mountain show a well-marked altitudinal zoning which provides grounds for three clearly definable belts:

4.1.1 Mid-Altitude Belt

This belt encompasses park territory with altitude below 1600 meters above sea level. The landscape of this belt is characterized by steep river valleys, curves and edges along the vertical slope of the river beds. Almost half of the forest's resources are concentrated here – 42.7% – and what is more, these are primarily mixed coniferous and deciduous forests and riverside deciduous forests. Landscapes belonging to this belt have a very good recreational potential. The greater portion of the park's cultural and historical sites are situated within the bounds of this belt. Most of them are accessible to and suitable for mass tourism and short-term/longer-term recreation- camping, picnics, angling, etc.

4.1.2 Higher Altitude Belt

It comprises areas with altitude between 1600 – 2200 m above sea level. It is characterized with considerable stretches of old denudational levels and with characteristic trog valleys and moraines created by glaciers sliding down the river valleys. 45.9% of the total forest resource is concentrated here- primarily coniferous forests of spruce, white fir and dwarf pine. For the most part, landscapes within this belt possess good aesthetic qualities. There are a number of opportunities for nature watching from vantage points well-framed by steep slopes providing distant and close perspectives; there are also unique habitats containing a great variety of species with considerable conservation value. Due to the variety of the terrain and good basic infrastructure this zone is also suitable for mass tourism, extreme tourism, adventure routes, angling and others.

4.1.3 Alpine Belt

It covers territories in excess of 2200 m above sea level – here the prevailing landscape elements are rugged peaks, steep cliff elevations and at their foot-deep cirque lakes. As regards plant life, the alpine belt contains species with a high degree of conservation importance. This zone is forestless with prevailing grass cohabitations and lichens. Landscapes in this belt possess very high aesthetic qualities, with extremely beautiful cirque lakes, views in all directions with close, medium-range and distant perspectives. However, on one hand alpine landscapes are extremely beautiful, on the other- they are very sensitive to external interference. Access to the majority of terrains in this belt is difficult, if not impossible. On one hand this restricts utilization, on the other- it helps landscape protection. In regard to possibilities for tourism, the alpine belt of Rila Monastery NP is suitable for special use, ecotourism and education.

4.2 Characteristics of the Major Landscape Elements in Rila Monastery NP

4.2.1 Relief

The formation of Rila as a massive high-altitude mountain began in the Paleozoic era when metamorphic rocks collided with granite and a dome-like morphostructure was formed, outlined by deep peripheral faults which are well pronounced in the relief of nowadays. The so-formed dome-like structure was subjected to continuous, chiefly positive, Tectonic movements during which it rose in height reaching a considerable altitude during the lower Tertiary. The most characteristic feature of all denudational flat spaces on the territory of Rila Monastery NP is their relatively high level of displacement due to radial faults caused by the constant dome-like rising of the mountain.

Rila Monastery NP includes the mid and high-altitude parts of Western Rila situated higher than 800 m above sea level. The valley of the Rilska river divides the territory in two main orthographic ridges- Skakavishko and Riletsko. While the Skakavishko ridge marks the northern boundary of the park the Riletsko ridge, which stretches between the Rilska river valley and the Iliyna river, is pivotal to RMNP landscape. In regard to its geological and tectonic characteristics it has a very complex structure. The relief RMNP is comprised primarily of metamorphic rocks- gneisses, biotito-gneisses, mica schists and marbles. The entire rock complex is strongly dislocated which has lead to a variety of forms due to exogenic processes. In lito-petrographic respect a greater part of the rocks are composed of metamorphic and intrusive rocks- granites- which are the oldest rocks in Bulgaria. Sedimental rocks are situated in the park's periphery.

4.2.2 Vegetation

The distribution of plant life as a main component of landscape is an important ecological and physiognomic factor. Vegetation within Rila Monastery NP is characterized with well-pronounced altitudinal differentiation and a great conservation value. As per a forest resources survey during the Rapid Environmental Assessment, Rila Monastery NP forest landscapes comprise 50% of the total park area. A greater part of the forest resources (93%) consists of natural forests, more than half of which (54%) being forests more than 100 years old. The various stretches of forest are situated on almost inaccessible, steep and very steep terrain - 69.7% of the area covered with forests has a gradient of over 30%. This on one hand facilitates the protection of a great part of the forest resource, and on the other- protects the slopes from floods, down-flowing waters and erosion.

Forest landscapes are primarily mixed. This validates their high degree of naturalness and recreational suitability as well as their high aesthetic value. It is well known that mixed forests have good recreational potential and as a whole are preferred by visitors to entirely coniferous stretches. The results from landscape quality evaluation show that these forests are graded as landscapes with highest quality. The park boasts around 32% of the total tree variety nationwide. Coniferous species prevail over deciduous trees with 68% to 31.7%. The distribution of coniferous species is as follows: spruce (16.7%), white fir (6.9%), dwarf pine (17.4%). Beech trees are among the most widespread deciduous species (21.7%), followed by winter oak (4.6%), birch (1.5%), aspen (1.3%), alder (1.1%)

4.2.3 Water Resources

Water resources are among the most important factors for any natural or artificial landscape. The park territory is one of the country's richest in water resources, 82% of river outflow being formed in high and medium-altitude parts of the mountain. Water landscapes within Rila Monastery NP landscapes are divided into: 1) natural 2) artificial. Prevailing natural landscapes are: rivers, streams and lakes. Artificial landscapes are dam lakes and canals.

The park is characterized by a well-developed alpine relief. As a result of the eroding and accumulative activities of glaciers, a considerable number of glacial lakes formed during the quaternary. There are 28 lakes within park territory, mountain rivers and streams springing out of some of them. The biggest rivers are the Rilska river, the Iliyna river, the Dyavolski Vodi river and others. The highest altitude lake is the first of the Devil's lakes (2445 m) and the lowest lying is the Dry Lake (1892 m). The park also boasts the biggest high altitude lake on the Balkans – Smradlivoto- with an area of 212 decares and a depth of 24 m.

4.2.4 Infrastructure and Cultural Sites

The park has a well-developed infrastructure- roads, buildings, power lines and water installations. Some of the buildings are derelict and have to be removed; others have been renovated and developed into a new tourism infrastructure.

The cultural and historical heritage of the park is immense. The most significant testament of Bulgarian spirit is located there- the Rila Monastery which in 1983 was declared a UNESCO monument of world culture. In the vicinity of the monastery there are two convents - Orlitsa and Pchelino. Northeast of the monastery, high up in the mountain there are two more architectural and historical ensembles: St. John of Rila hermitage where initially the saint was buried, and the second one is the St. Evangelist Luca hermitage. There are a number of cultural and historic sites within the park - like Strajnitsata, formerly known as Eleshnitsa, which are in need of renovation.

The combination of exceptionally beautiful nature and a number of historical sites make the territory of Nature Park Rila Monastery an attractive place for many tourists. The architectural complex Rila monastery, where the park derives its name is an important tourist focal point, a lot of tourist itineraries starting from or passing through it.

4.3 Classification of Landscapes in Rila Monastery NP

As per existing landscape divisions in Bulgaria, RM NP falls under:

B. Central Balkan mountainous area; Rila landscape subarea; 87 Central Rila landscape region; Central Rila landscape region. Southern Rila landscape region (Rila Monastery NP management plan)

Landscape categorization in Rila Monastery NP is consistent with the following:

- Classification of landscapes by macro-relief features
- Categorization of landscapes used in the Rila National Park management plan
- Existing natural and cultural resources - the adopted classification takes into account the main specifics of a natural park with small unspoiled landscapes.

When classifying landscape types for the purposes of quick landscape evaluation (QLE), the petrographic features of landscape are not incorporated in the name of the landscape type. Justification for this typology is the fact that a greater part of Rila Monastery NP territory is built up of the oldest rocks in Bulgaria- metamorphic rocks and a smaller part by intrusive rocks, such as granites. Hence, Rila Monastery NP landscapes are grouped as follows *(Appendix 1)*:

Type 1. Mid-Altitude Landscapes

Type 1.1. Mid-altitude landscapes of deciduous forests
Type 1.2 Mid-altitude landscapes of mixed deciduous and coniferous forests

Type 2. Higher Altitude Landscapes

Type 2.1 High altitude landscapes of mixed forests
Type 2.2 High altitude landscapes of coniferous forests
Type 2.2 High altitude landscapes of rare and short stemmed forests
Type 2.3 High altitude landscapes of lawns and meadows

Type 3 Sub-Alpine Landscapes

Type 3.1 Sub-alpine landscapes of bushes and lawns

Type 4. Alpine landscapes

Type 4.1 Alpine landscapes of rocks, screes and stone rivers

Type 5. Water Landscapes

Type 5.1 Natural water landscapes
Type 5.2 Artificial water landscapes

Type 6. Natural Landscape with Presence of Cultural Sites

5.0 Landscape Evaluation Results

As was already mentioned in the objectives for Rila Monastery NP landscape evaluation, planning and implementation of landscape evaluation in any given territory is not an end in itself. One of the goals of Rila Monastery NP landscape protection is to reduce the impact to and educate about natural beauty. Existing Rila Monastery NP landscapes are characterized by great variety and altitudinal zones. Research results have been examined in view of landscape categories and basic landscape elements - rocks, vegetation variety, water resources, presence of characteristic elements, single trees and others. Results on landscape evaluation - by terrain and by photographs are presented in tables (*Appendices 5, 6 and 7*) and can be interpreted as follows:

5.1 Distribution of Landscape by Type Results

The results from the distribution of landscape by type in Rila Monastery NP according to the adopted classification is presented in *Appendix 5*. Out of the total examined landscapes, half - 50% are high altitude, 21.9% are sub-alpine, 15.6% are mid-altitude and 12.5% are alpine landscapes.

According to the presence of certain basic landscape elements, the landscapes chosen for examination within RMNP are distributed as follows:

- Medium altitude landscapes of deciduous forests 9.4%
- Medium altitude landscapes of mixed deciduous and coniferous forests 6.25%
- High mountain landscapes of mixed deciduous and coniferous forests 12.5%
- High mountain landscapes of coniferous forests 25.5%
- High altitude landscapes of rare and short stemmed forests and lawns 9.4%
- High altitude landscapes of lawns and meadows 3.12%
- Sub-alpine landscapes of pine-scrubs and meadows 21.9%
- Alpine landscapes of rocks, screes and stone rivers 12.5%

Almost all of the examined landscapes - 90.7% are natural, about half of those - 59.4% being landscapes with presence of water resources (lakes, rivers, waterfalls and streams) - proof of their high aesthetic qualities.

5.2 Results from Evaluation of Landscape Quality

- Almost all examined landscapes – 84.8% have a high degree of picturesqueness and expressiveness; of all examined landscapes only 15.6% are rated as having medium aesthetic qualities, and none are rated as lacking picturesque qualities.
- Almost all landscapes 90.62% - have a high degree of stability and sustainability; only about 6.25% are rated as average.
- A great part of the examined landscapes from all categories (84.37%) have high grades for naturalness and pristine state - with only 12.5% rated as average and none rated as lacking these qualities.
- A great part of landscapes (81.5%) have a high degree of uniqueness, the remaining 15.6% are ranked as average.

5.3 Results from Psychological Evaluation of Landscapes

- A great part of examined landscapes - 81.3% - induce a notion of happiness.
- Also, more than half of examined landscapes invoke a sense of tranquility - 62.5%
- A sense of spiritual uplifting is caused by about half of examined landscapes - 40.6%
- A small part of the landscapes- primarily those affected by human impact provoke negative notions - 6.25% of all cases

5.4 Results from Evaluating Landscape as a Natural Resource

- Almost all examined landscapes - 87.5% have a rich variety of perspective- close, medium and distant
- Water resources - lakes, rivers, waterfalls and streams are a significant part of the landscape and are present in 62.5% of examined landscapes.
- Rocks and rock formations - peaks, screes, expanses of rocks- are important landscape elements. They can be seen in various plans in 62.5% of examined landscapes.
- Plants, forests and shrubs cover 68.8% of examined landscapes
- Open spaces and flower meadows are landscape elements in 65.6% of the cases
- A greater part of examined landscapes of RMNP - in 81.25% there is a presence of rare and/or beautiful plant species
- Animal species cover 65.6% of examined landscapes
- Harmonious sounds (the singing of birds, the gurgling of streams, rivers, waterfalls, the hum of insects) can always be heard - in 93.7% of the cases.
- Tourist items - roads, routes, chalets, shelters, markings are present in 84.4% of the landscapes.

5.5 Results from Grading Landscape Factors and Comprehensive Evaluation of Examined Landscapes

Appendix 4 shows the results from sorting landscape quality indicators according to their importance. The most significant factor for landscape quality is picturesqueness (expressiveness). The second most important factor is natural state (pristine state); third comes stability (sustainability); the fourth factor is uniqueness (rareness, exoticism), fifth is scenery variety. The sixth most important factor is vulnerability of landscape, seventh comes accessibility and the last factor is how typical the landscape is within the examined territory.

5.6 Results from Landscape Evaluation by Photographs

Evaluating landscape by a series of representative photographs undoubtedly complements landscape evaluation. This is done through a set of aesthetic indicators adopted by the theory and practice of landscape design *(Appendix 6.1)* and a select number of photographs. The concurrent effect of all indicators is of crucial importance to landscape evaluation according to a quarter of landscape designers participating in the evaluation. The general character of landscape including indicators such as picturesqueness and vividness is deemed most important by a fifth of all evaluators. Of average importance are perspective, color and distinctness, while proportion, space and silhouette impact have less importance. Negligible is

the importance of light and shade, part of the participants emphasizing on this indicator's dependability on the time of day.

According to the respondents, elements which are crucial for the aesthetic qualities of landscape *(Appendix 6.2)* are: presence of forest (28%); also of rocks and stones (17%). Terrain, presence of natural and artificial expanses and flows of water almost always have the same weight in shaping the landscape picture (respectively 12%, 11% and 11% of all respondents). Interestingly enough, in spite of the relatively insignificant amount of examined landscapes with flowers present, this element has received its share in the evaluation (4%).

Out of the evaluated landscape pictures about 64% contain manmade sites *(Appendix 6.3)*. The assessment of their impact on landscape is important, in view of the Nature Park's status where various ways of utilizing the territory will be developed. In more than half of landscape pictures under evaluation, the level of human activity is low (55%). It is rated as high by 8% of respondents- these are landscapes with views facing the Kalin dam, the second entrance to the Rila Monastery and others.

According to the general aesthetic evaluation, 22% of landscape pictures are exceptionally beautiful, 32% are very beautiful *(Appendix 6.4)*. Those landscapes with unfavorable human-related activities have received low aesthetic evaluations - 7% of the cases.

After having summarized the results from the general aesthetic evaluation of landscape pictures and having compared them to terrain evaluation results *(Appendix 6.5)*, we observe an almost complete similarity in the percentage of incidence of the groups of landscapes with the same quality. In view of the fact that the two evaluations are independent of each other, we can say that they objectively reflect the present state of affairs in Rila Monastery Nature Park.

5.7 Comprehensive Evaluation of all Examined Landscapes

Results from the comprehensive evaluation are presented in *Appendix 7* with the following results:

More than half of examined landscapes (53.1%) have been given the highest comprehensive grade (i.e. highest quality degree). These are landscapes numbered as follows: 2, 3, 4, 6, 9, 10, 11, 14, 15, 16, 18, 21, 22, 23, 27, 28.

These landscapes can be seen along the following routes:

- Along the whole length of the Kalugerski Dol route. Typical features of this route are:
  - change of close, medium and distant perspectives and a rise in altitude
  - opportunity to experience the change of plant species with the rise in altitude - change of deciduous with mixed deciduous and coniferous species.
  - Opportunity for direct observation of rare plant species - Rila oak, Petrov Krast, etc.
  - Observation of plant species distribution inversion - distribution of oak at higher altitudes than that of beech.
- Tourist route along the Rila river and more specifically - the Water peak.
  - a basic tourist route with exceptionally beautiful views in all directions; West - to mount Yosifitsa, to the East there is a wonderful view to the valley above Rila Monastery; the Rila river valley is shaped by steep slopes like the slope of the Water peak to the North and spruce forest to the South.

– The approaches to the Smradlivoto lake and the area of the lake - exceptional
– Subalpine meadows above the Fish Lakes chalet
– The saddleback under mount Mermera - exceptionally picturesque area with a variety of perspective and a wealth of species.
– The route from the Fish Lake chalet to the place called Peaceful Rila - charming landscape with unobstructed view to the valley, the river and the forest slopes. Beautiful and rare plants may be observed- the slopes are covered with juniper and yellow butterwood (*Gentiana lutea*). It is a medicinal plant and extremely endangered (its roots are gathered making recovery very slow). The yellow butterwood blooms in July and August.
– The Riletsko Ridge - the landscapes observed from this ridge can be qualified as an emotional climax of sorts.

About a third of examined landscapes-28.1% - are rated as high quality (The numbers of the evaluation forms are as follows: 1, 5, 7, 8, 13, 17, 19, 25, 30)

These landscapes are situated around the following routes
- Parts of deciduous beech forests and mixed beech-spruce and beech-oak forests around the Kalugerski Dol area
- Rila Monastery – cultural landscape with exceptional historic, religious and ethical value, but with a certain level of deterioration due to the extensive number of tourists.
- Natural fir forest along the way to Smradlivoto lake- this type of landscape is situated on a steep terrain and regardless of its high biodiversity value, it is not especially exciting to the ordinary visitor. There is no variety of perspective, no interplay of light, shade and color.
- The Fish Lakes Chalet- spectacular alpine scenery with especially appealing water elements (big cirque lakes) and good tourist infrastructure. The threat to the landscape stems from inappropriate tourist use of the adjacent lawns and contamination of the lakes.
- The route from the Fish Lakes chalet to Peaceful Rila - charming and accessible to tourists of all ages sub-alpine scenery with close and medium-range /panoramas.
- View towards mount Kodjakaritsa from the 2000m mark- pleasant and diverse views to the Iliyna river below and mount Kodjakaritsa above.
- The Kalin dam area- beautiful high altitude landscape with a variety of vantage points, characteristic terrain, a wealth of color and interplay of light and shade with possibilities to observe altitude displacement and change of plant species.

About 18.7% of landscapes are rated as average quality (numbers 12, 24, 26, 29, 31, 32)

The majority of these landscapes have a certain degree of deterioration. These are:
– the Hydro area - the installation is a tunnel for capturing waters flowing above 2000 m and was built between 1978 and 1984. Built in the rock, its overall length is 4 km with a total of 5 water entrapments and openings for access to the tunnel. A negative impact on the natural landscape is observable. In this part of the river the water flow and the river bed adjacent to the installation have dried up. Water is allowed to flow along the river bed only during the months of July and August. Landscape deterioration is not irreversible since there is a steady natural recovery of the river ecosystem and vegetation in the area.
– the area of the Turkish Piece along the Iliyna river and the cliffs above the Turkish Piece near Radovitsa. The natural landscape of high altitude mixed forests is disrupted by the presence of some derelict buildings.
– the area around the Kalin water electric station and the Kalin dam - the aesthetics of natural landscape are violated by the dam and the installations around it.

6.0 Territorial Zoning According to Landscape Evaluation

As regards the quality of Rila Monastery NP landscape evaluation, we support the commonly held view that natural beauty appeals to people's aesthetic perceptions and hence is a "natural spiritual resource" which elevates people's spirits and positively affects their psyche and work efficiency. The beauty of nature should be appreciated for its own sake regardless of any economic interests.

Landscape planning and evaluation on any territory is not an end in itself. As American experience shows, activities on preserving aesthetic assets are not an independent program, but can be viewed as an integral part of the natural resource management plan. Protection of the aesthetic qualities of landscapes is the leading principle that should unite the various management strategies. Visitors today and future generations for whom our protection efforts are intended, should be able to recognize the same landscape elements - whether they are static or moving - within an unchanged framework. (Natural Resource Management 1977).

6.1 Landscape Zoning According to Quality

Based on the results from the evaluations by terrain and photographs, in line with the selected criteria for landscape quality, Rila Monastery NP territory is divided in zones according to:
- Assessment of landscape value and aesthetic qualities
- Functional suitability of landscape and recommended use

Within park territory landscape zones of varying quality have been identified - as illustrated in figure No1, visualizing the summarized data from landscape quality evaluation. The different grades are in line with the major and for the most part unchangeable landscape elements. (Clark 1970)

Zone A - Landscapes with Very High Quality

Landscapes with high and very high grades in the comprehensive evaluation. This zone is characterized by landscape with extremely high aesthetic qualities with characteristic terrain and rock formations, variety of perspective, diverse vegetation, blend of colors and textures.

This zone includes the highest parts of the park territory, the peaks along the central Riletsko Ridge and the Marble Cique with glacial phitocenoses on limestone, observable in Rila only within the bounds of the park; the peaks along the peripheral northern and southern ridges, the landscapes along the way to Kalin dam. Another type of landscape is the Kiril Meadow area, the Radovitsa area with natural forests of spruce and other species with high conservation value. Other landscapes are the Water Mount and Peaceful Rila.

The major impression from these sub-alpine and alpine landscapes is the exciting scenery with a great number of vantage points in all directions. The greater part of examined landscapes in these hypsometric categories have a low level of human impact and few tourist sites disrupting the natural scenery with the exception of the Kalin dam and the surroundings of the Fish Lakes.

Zone B - High Quality Landscapes

Landscapes with average grade in the comprehensive evaluation. This zone is characterized by appealing landscape but specific and clearly definable landscape features are not as prominent; low level of human impact to natural landscapes is observable.

Zone B has incorporated a great part of high altitude and medium altitude landscapes such as the Kalugerovo ravine, the cultural landscape of Rila Monastery, high altitude and sub-alpine landscapes along the Iliyna river, landscapes along the route from the Fish Lakes chalet to the Hydro, landscapes along the way from the Hydro to the Smradlivoto lake and the Brichi Bor area. The landscapes of Peaceful Rila have been included here primarily due to the high voltage posts and poaching which disrupt the landscape Aesthetics and ecosystem sustainability.

These landscapes are characterized by moderate and passable slopes, accessible forests and availability of open spaces - sub-alpine meadows, stone rivers and river valleys. The value of these landscapes is in the possibility to directly observe the change in plant species with altitude over a short span of time.

Zone C - Landscapes with Medium Quality

These landscapes have a low or very low comprehensive grade. This zone is characterized by less appealing natural landscapes in which there are varying degrees of human activity and unsatisfactory level of sustainability.

This zone may be classified as intermediary/buffer. Under this category come the water facilities in the Hydro district, a small part of the landscapes near the Kalin dam lake; the landscape around the Turkish piece area of the Ilyina river, the Bukovo Burdo district and part of the landscapes around mark 2000 above the Iliyna river.

Zoning in accordance with landscape quality and its recommended use is illustrated by maps with relative precision (figures 1&2).

6.2 Landscape Zoning According to Functional Suitability

Based on all results and quality landscape zoning grouping of landscapes has been carried out according to their functional suitability and landscape recommended use. The various groups of landscapes are displayed on the map in figure 2.

***Almost all landscapes in zone A have been included in group 1 under functional suitability**:*

- Landscapes for visual observation
- Landscapes for specialized observation- of valuable plant and animal species, cirque lakes, precious habitats and rare terrain forms.
- Educational landscapes- ecological tourism, religious and pilgrimage tourism

A special program in the management plan should be implemented for protecting the landscape from this group.

***A great part of the zone B landscapes have been included in group 2 under functional suitability**:*

These landscapes which are primarily from the high altitude belt are suitable for wide use and mass tourism:

- Cultural tourism- primarily in the vicinity of Rila Monastery and other holy places
- Picnic spots, camping, angling
- Recreation with varying length

These landscapes should be monitored regularly in order to avoid possible aesthetic or ecological deterioration.

Group 3 under functional suitability includes all landscapes from zone C

These landscapes can be defined as deteriorated or as having significant human impact. In view of their possible uses they are divided in two groups:

- Landscapes suitable to accommodate a possible enlargement of technical infrastructure for the purposes of building roads, parking lots, tourist buildings, and a visitor information center.
- Landscapes which in spite of the irretrievable disruption to the natural setting- like the Hydro area and the Kalin dam- do not have a dramatic effect on ecosystems and landscape beauty.

7.0 Results Analysis, Conclusion and Recommendation

7.1 Summarized Results Analysis

The results from the evaluation of landscape quality by terrain observation and photographs have been analyzed according to the criteria of qualified experts who have made the quality and aesthetic evaluation of the landscapes. There are four aesthetic parameters:

- General imposingness of the scenery
- Expressiveness of relief
- Spatial variety of plant life
- Variety and compatibility of human impact

7.2 General Conclusions

1. The park territory has been officially declared a health resort (SG 54th ed/ 63) and possesses good recreational potential in both regional and national respect- a resource that has been underused.
2. The evaluation of landscape and its major attributes proves the exceptional aesthetic value and the extreme variety of natural and cultural components.
3. The terrain structure and the big displacement in altitude provide a greater number of vantage points with a great variety of landscapes and varied perspectives.
4. The existing infrastructure ensures access to the places with most prized landscapes in regard to their aesthetic and conservation value.
5. The territory of Rila Monastery NP is a synthesis of incredibly beautiful nature and a multitude of cultural sites with historic importance- a prerequisite for attracting great numbers of foreign and Bulgarian tourists.
6. The results from of landscape quality evaluation by factors such as: variety, picturesqueness, natural state, uniqueness, representative character, accessibility- show that the territory of Rila Monastery NP has exceptionally high aesthetic qualities of landscape.
7. The natural resource evaluation results prove the high potential of Rila Monastery NP
8. According to the psychological evaluation of the landscape, existing landscapes invoke positive feelings- with very few exceptions.
9. All results prove that from a contemporary landscape perspective, the territory of RMNP has a high natural and aesthetic impact and a positive psychological effect.

7.3 Recommendations

The major conclusions for recommended use of landscapes (as reflected in Figure2) are made in consideration of the principle of landscape protection and preservation and with regard to the aesthetic perfection of nature in Rila Monastery NP.

1. For the purposes of preserving the unique natural beauty of landscapes on the territory of the park, they should be exposed in a relevant way. In order to achieve this, the method of interpretation needs to be implemented, whereby professional trained guides "assist" the visitors in their perception of natural beauty and cultural environment.
2. The park territory has to be prepared, presented and managed for the purpose of revealing natural beauty to visitors.
3. The management plan should include specific measures for preserving the park's natural beauty. In other words, the park's territory should be "exhibited" in the best possible manner.
4. Special observation sites, towers and explanatory signs should be constructed
5. Professional guides familiar with the natural, aesthetic and cultural qualities of the territory should be assigned to the visitor center or park administration.
6. There needs to be a monitoring scheme designed to register deterioration caused by the tourist flow. If landscape conservation measures need to be taken, a strict code of landscape use and alternative use should be implemented - "copies" of most valued landscapes can be offered at visitor centers in the form of photos and films.
7. The aesthetic response to nature should be fostered from a very early age. Specific actions in this respect might be:
   - visits to RMNP for the purpose of getting to know beautiful landscapes - waterfalls, forests, stone rivers, glacial lakes, etc
   - education in the open - part of the school curriculum to be carried out on the spot

Bibliography

BSS 17.8.1.01-88 (CMEA 53-3-85) *Nature Protection. Landscapes. Terms and Definitions. Council of Ministers Quality Committee 1988*

BSS 17.8.1.02-89 (CMEA 6005-87) *Nature Protection. Landscapes. Classification. Council of Ministers Quality Committee 1990.*

SG 1963, 54th ed *Order No2620, Ministry of Public Health and Social Welfare*

SG 1992, 73rd ed *List of Declared Cultural Monuments on the Territory of the Holy Rila Monastery. Ministry of Culture*

Dolgov K.M. *The aesthetics of nature* http://philosopy.ru/iphas/library/estpri.html

Troeva V., Tsolova G., 1997 Landscape Planning. University Architecture, Civil Engineering and Geodesy: Sofia

Nature Park Rila Management Plan

Buhyoff G.J., Wellman J.D., Harvey H. and Fraser R.A., 1978. *Landscape architects's interpretations of people's landscape preferences*, Journal of environmental management, 6, p.255-262, Academic Press Inc.: London

Cassidy D., Coles R., Millard A. and Shaw D, 1991. *Forest of Mercia Context report:* Birmingham Polytechnic

Clark D.S. (1970). *Hertfordshire countryside plan – visual assessment*. Landscape research group conference II.

Clout, H.D (1972): Landscape evaluation, ch. 9, p. 131-137 from *Rural geography: An introductory survey*, London: Pergamon Press

http://www.ecoethics/beo2/15.html

Rila Monastery Nature Park: http://www.bg-parks.net/

http://www.vvsu.ru/Books/u_regmod/page0007.asp

Dolgov K.M. *The Aesthetics of Nature* **(**http://philosophy.ru/iphras/library/estpri.html

Protection of aesthetic values , chapter 2. Natural Resource Management Guideline,

Radovanova P., 2000 *Modeling a Sustainable City Forest in Sofia- Implementing British Experience for the Concept of Civil and Public Forest,* Research Project Report for the Open Society Institute: Sofia

Ulrich R.S., 1896. *Human responses to vegetation and landscapes.* Landscape and urban planning, 13. Elsevier Science Publishers: The Netherlands

Vroom M.J., 1986. *The perception of dimensions of space and levels of infrastructure and its application in landscape planning*. Landscape planning, 12, Elsevier Science Publishers: The Netherlands

Classification of "Rila Monastery" Nature Park Landscapes

Type of Landscape in view of Macrorelief Specifics and Vegetation	Altitude m/above sea level	Natural Landscapes		Natural Landscapes with Presence of Dominating Water Elements	
		with no other dominating element present	with presence of cultural sites	Natural	Artificial / Disrupted
		No of Form	*No of Form*	*No of Form*	*No of Form*
1. Mid Altitude Landscapes	**1000 - 1600**				
1.1.of Deciduous Forests		2, 3		1	
1.2.of Mixed Deciduous and Coniferous Forests		4	7		
2. Higher Altitude Landscapes	**1600 - 2200**				
2.1.of Mixed Deciduous and Coniferous Forests				5, 6, 24	30 (disrupted)
2.2.of Coniferous Forests		13, 27		9,10,11,12, 26	25 (disrupted)
2.3. of Rare Short-stemmed forests and Bushes		8, 29			31(disrupted)
2.4.of meadows and bushes		28			
3. Sub-Alpine Landscapes	**2200-2500**				
3.1.of meadows and dwarf pine		14		15, 16, 17, 19, 20	32 (disrupted)
4. Alpine Landscapes	**over 2500**				
4.1.of Rocks, Screes and Stone Rivers				18, 21, 23, 26	

Observation Form 10:

Quick Aesthetic Evaluation of "Rila Monastery" Natural Park Landscape

Form №

Examined area …… ***Observation Spot*** ……..

Locality, summary, brief description ……

Landscape Classification ……

longitude *latitude* *altitude*

Photograph No …… ***Film Frame No:*** ……...

Variety of Typical Landscape Elements

Which of the following components is most defining for the landscape in question?

Landscape Elements	***Presence***	***Which is dominant?***	***specify and describe***
Rocks and Rock Formations			
Forests and Bushes			
Lawns (meadows)			
Water elements, river, lake, waterfall			
Variety of Landscape Perspectives- Close, Distant, Medium			
Beautiful or Rare Plant Species			
Animal Species			
Cultural / Historical Sites			
Tourist and Infrastructure Sites (chalets)			
Harmonious Sounds- the rippling of river, stream, waterfall, bird song			
Others, please specify			

Make a psychological evaluation by pointing out what feelings the landscape invokes in you

Positive Feelings	***yes***	***no***
Delight, Elevation		
Tranquility		
Spiritual Uplift		
Happiness, Aesthetic Pleasure		
Negative Feelings	***yes***	***no***
Confusion		
Sadness		
Fear		
Indifference		

Landscape Evaluation by Site Quality Indicators

Landscape Quality Indicators	***Evaluation Grade***				
	Very High	***High***	**Average**	**Low**	**Very Low**
Picturesqueness, Vividness, Expressiveness					
Natural State, Pristine State					
Stability, Sustainability					
Uniqueness, Rareness (Exoticity)					
Variety of scenery					
Representativeness					
Vulnerability					
Accessibility, Use					

Respondent: …… ***Date*** ……..

Appendix 3

Questionnaire for Distance Evaluation of Landscape

Object:

Indicators for the esthetical quality of the landscape	Presence (mark with a √)
1. Categorization	
- - Vertical accent	
- - Picturesque accent	
- - Seasonal accent	
Note:	
2. Proportionality	
- - Landscape elements harmony	
Note:	
3. Spatiality	
3.1. Vertical and horizontal elements harmony	
3.2. Dominant areas	
- - Opened	
- - Closed	
Note:	
4. Color:	
4.1. Harmony of colors	
- - Typical	
- - Contrast	
- - Nuance	
Note:	
4.2. Dominant colors:	
- Warm - Cold	
Note:	
5. Prospect:	
- Foreground	
- Middle ground	
- Background	
Note:	
6. Light and shade effects	
- Contrast	
- Hem stitched	
- inexpressive	
Note:	
7. Silhouette impact	
Note:	
8. The picture in frame	
Note:	

9. Landscape general characteristics			
- Picturesqueness			
- Graphic			
Note:			
10. Which of the upper pointed indictors is the most important?			
11. Which element defines the landscape nature – lay, forests, flowers, interesting plants, water area/ water flow, rocks, animals, roads, buildings, other (point three elements)			
12. Assessment of the human impact on the landscape (point the measures necessary to harmonize the environment with the human interference)	Low	Medium	Big
Note:			
13. The Landscape provoke in me the feeling of:			
- Impressiveness			
- Cheerfulness			
- Peace			
- Dynamism			
- Depression			
- Fear			
- Confusion			
- Other			
Note:			
14. General esthetical assessment (it is not a sum)	Low	Medium	High

Evaluator:……..

Ranking the Landscape Quality Indicators as per Expert Evaluation

	Landscape Quality Indicators	*single grades*								*total*	*mean grade*	*comprehensive grade*
		1st expert	2nd expert	3rd expert	4th expert	5th expert	6th expert	7th expert	8th expert			
1	**Picturesqueness, Vividness, Expressiveness**	2	1	1	1	2	2	1	1	11	**1.4**	8
2	**Natural State, Pristine State**	2	2	3	2	2	1	2	1	15	**1.9**	7
3	**Stability, Sustainability**	1	5	1	3	1	4	2	2	19	**2.4**	6
4	**Uniqueness, Rareness (Exoticity)**	1	4	2	2	4	3	3	2	21	**2.6**	5
5	**Variety of Scenery**	1	6	4	1	5	6	2	3	28	**3.5**	4
6	**Representativeness (for "Rila Monastery" NP)**	5	8	4	4	5	7	6	4	43	**5.4**	1
7	**Vulnerability (actual and potential disruption to landscape as a result of human activity)**	4	7	8	2	1	8	4	2	36	**4.5**	3
8	**Accessibility (Use of tourist and road infrastructure)**	3	3	8	2	6	5	5	5	37	**4.6**	2

Terrain Evaluation Data of Natural Landscapes

Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	Landscape Elements										Emotional Response								Landscape Quality Indicators							
				Rocks and Rock Formations	Forests and Bushes	Lawns (meadows)	Water Elements- Lake, River, Waterfall	Variety of Landscape Perspective- Close, Distant, Medium	Beautiful and Rare Plant Species	Animal Species	Cultural Sites / Historical Sites	Tourist and Infrastructure Sites (chalets)	Harmonious Sounds- the rippling of river, stream, waterfall, bird song	Delight, Elevation	Tranquility	Spiritual Uplift	Happiness, Aesthetic Pleasure	Confusion	Sadness	Fear	Indifference	Picturesqueness, Vividness, Expressiveness	Natural State, Pristine State	Stability, Sustainability	Uniqueness, Rareness (Exoticity)	Variety of Scenery	Representativeness	Vulnerability	Accessibility, Use
1	Kalugerski Dol	The Kalugerski Dol River	Midaltitude of Deciduous Forests	no	yes	no	waterfall	close	yes	no	no	no	no	no	yes	no	yes	no	no	no	no	high	high	high	averag e	aver age	aver age	avera ge	high
2	Kalugerski Dol	Rila Oak	Midaltitude of Deciduous Forests	no	yes	no	no	close, distant, medium	yes	yes	no	track	bird song	yes	yes	yes	yes	no	no	no	no	high	high	high	high	aver age	high	low	high
3	Kalugerski Dol	Beech Tree Forest	Midaltitude of Deciduous Forests	no	yes	ye s	no	close	no	no	no	track	no	yes	yes	yes	yes	no	no	no	no	high	high	high	high	aver age	aver age	low	high
4	Kalugerski Dol	Ridge across m. Tsarev	Midaltitude of Mixed Deciduous and Coniferous Forests	yes	yes	ye s	no	close, distant, medium	yes	yes	no	track	bird song	yes	yes	yes	yes	no	no	no	no	high	high	high	high	high	high	low	high
5	Kalugerski Dol	Before Ravna	Midaltitude of Mixed Deciduous and Coniferous Forests	no	yes	ye s	no	close, medium	yes, petrov krast	no	no	track	bird song	no	yes	no	yes	no	no	no	no	high	high	high	high	high	high	high	high
6	Below Ravna	Rock Facing Brichi Bor	Midaltitude of Mixed Deciduous and Coniferous Forests	yes	yes	ye s	no	close, distant, medium	yes	yes	yes	track	bird song	yes	no	yes	yes	no	no	no	no	high	high	high	high	high	aver age	low	high
7	Rila Monastery	Inner Yard and Back Yard	Midaltitude of Mixed Deciduous and Coniferous Forests	no	yes	no	river, waterfall, spring	close, medium	no	no	yes	hotel, restaurant , shops	noise, unharmon ious sounds	no	no	yes	no	no	no	no	no	high	high	high	high	high	high	high	high
8	Fish Lakes	View towards Zlia Zab	Higher Altitude of Rare Short-stemmed forests and Bushes	yes	yes	ye s	no	close, medium	no	yes	no	chalet, restaurant , shops	bird song	no	yes	no	yes	no	no	no	no	high	high	high	high	high	high	avera ge	high
9	on the way be-low the Water Mount	Trog Valley	Higher Altitude of Coniferous Forest	yes	yes	ye s	river	close, distant, medium	yes	yes	no	road	river sound	yes	no	yes	no	no	no	no	no	high	high	high	high	high	high	low	high

Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	Landscape Elements										Emotional Response								Landscape Quality Indicators							
				Rocks and Rock Formations	Forests and Bushes	Lawns (meadows)	Water Elements- Lake, River, Waterfall	Variety of Landscape Perspective- Close, Distant, Medium	Beautiful and Rare Plant Species	Animal Species	Cultural Sites / Historical Sites	Tourist and Infrastructure Sites (chalets)	Harmonious Sounds- the rippling of river, stream, waterfall, bird song	Delight, Elevation	Tranquility	Spiritual Uplift	Happiness, Aesthetic Pleasure	Confusion	Sadness	Fear	Indifference	Picturesqueness, Vividness, Expressiveness	Natural State, Pristine State	Stability, Sustainability	Uniqueness, Rareness (Exoticity)	Variety of Scenery	Representativeness	Vulnerability	Accessibility, Use
10	Jenemska River	Waterfall	Higher Altitude of Coniferous Forest	yes	yes	no	river, waterfall	close	yes	yes	no	marking, road, bridge	river and waterfalls ound,	yes	no	yes	yes	no	no	no	no	high	high	high	high	high	high	low	aver age
11	Peaceful Rila	Mount Yosifitsa	Higher Altitude of Coniferous Forest	yes	yes	ye s	river	close, distant, medium	yes	yes	no	marking, road, picnic spot	river sound, bird song	no	yes	yes	yes	no	no	no	no	high	high	high	high	high	aver age	low	high
12	Peaceful Rila	The Hydro	Higher Altitude of Coniferous Forest	yes	yes	ye s	river	close, distant, medium	yes	no	no	road, building	river sound, stream	no	yes	no	yes	yes	no	no	?	avera ge	avera ge	aver age	averag e	high	aver age	high	high
13	Along the way from the Hydro to the Smradlivoto Lake	Fir Forest	Higher Altitude of Coniferous Forest	no	yes	no	no	close, medium	yes	yes	no	marking, road	river sound, stream	no	yes	no	yes	no	no	no	no	avera ge	high	high	high	aver age	aver age	low	aver age
14	Along the way to Smradlivoto Lake	Before the Skrejko Spring	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	ye s	river	close, distant, medium	да, алпийс ки цветя	yes	no	track, chalet in the lowlands	river and waterfalls ound,	yes	no	yes	yes	no	no	no	no	high	high	high	high	aver age	aver age	low	aver age
15	Smradlivoto Lake	Smradlivoto Lake	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	ye s	river	close, distant, medium	yes	yes	no	shelter remains	waterfall sound,	yes	yes	yes	yes	no	no	no	no	high	high	high	high	high	high	avera ge	aver age
16	Above the Fish Lakes Valley	Glacial Lakes	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	ye s	lake	close, medium	yes	yes	no	marking, road	bird song	yes	yes	yes	yes	no	no	no	no	high	high	high	high	high	high	low	aver age
17	Fish Lakes	Fish Lakes Chalet	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	ye s	lake	close, distant, medium	yes	yes	no	chalet	river sound bird song	yes	yes	yes	yes	no	no	no	no	high	high	high	high	high	high	high	high

				Landscape Elements											Emotional Response								Landscape Quality Indicators							
Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	Rocks and Rock Formations	Forests and Bushes	Lawns (meadows)	Water Elements- Lake, River, Waterfall	Variety of Landscape Perspective- Close, Distant, Medium	Beautiful and Rare Plant Species	Animal Species	Cultural Sites / Historical Sites	Tourist and Infrastructure Sites (chalets)	Harmonious Sounds- the rippling of river, stream, waterfall, bird song	Delight, Elevation	Tranquility	Spiritual Uplift	Happiness, Aesthetic Pleasure	Confusion	Sadness	Fear	Indifference	Picturesqueness, Vividness, Expressiveness	Natural State, Pristine State	Stability, Sustainability	Uniqueness, Rareness (Exoticity)	Variety of Scenery	Representativeness	Vulnerability	Accessibility, Use
18	The Saddleback under Mount Mermera	Illiyna River	Alpine Landscape of Rocks, Screes and Stone Rivers	yes	yes	yes	river	close, distant, medium	yes	yes	no	marking, road	wind noise, bird song	yes	yes	no	yes	no	no	no	no	high	high	high	high	high	average	low	average
19	Along the way from the Fish Lakes Chalet to Quiet Rila	Dwarf-pine Formations	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	yes	river	close, medium	yes	yes	no	marking, road	river sound bird song	no	yes	yes	yes	no	no	no	no	high	high	high	high	high	high	high	high
20	Along the way from the Fish Lakes Chalet to Quiet Rila	Rilska River	Sub-Alpine of Meadows and Dwarf-pine	yes	yes	yes	river	close, medium	yes	yes	no	marking, road	very coherent river sound	no	yes	no	yes	no	no	no	no	high	high	high	high	high	high	low	high
21	Along the way to Rilets Chalet	Under mount Mramorets	Alpine Landscape of Rocks, Screes and Stone Rivers	yes	yes	yes	lake	close, distant, medium	no	no	no	no	no	yes	no	yes	yes	no	no	no	no	high	high	high	high	high	high	low	average
22	Along the way to Rilets Chalet	Mramoretsko Lake and Fish Lakes	Alpine Landscape of Rocks, Screes and Stone Rivers	yes	yes	yes	lake	close, distant, medium	yes	yes	no	no	bird song	yes	no	yes	no	no	no	no	no	high	high	high	high	high	high	low	low
23	Below mt Rilets	Djendemski Lakes	Alpine Landscape of Rocks, Screes and Stone Rivers	yes	no	yes	lake	close, distant, medium	yes	yes	no	no	quiet	yes	no	yes	no	no	no	no	no	high	high	high	high	high	high	low	low
24	Along the way to Iliyna river	Turkish Piece	Higher altitude of Mixed Deciduous and Coniferous Forests	yes	yes	yes	river	close, medium	yes	no	no	derelict buildings	no	no	yes	no	yes	no	no	no	no	high	high	high	average	average	average	average	high

				Landscape Elements										Emotional Response								Landscape Quality Indicators							
Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	Rocks and Rock Formations	Forests and Bushes	Lawns (meadows)	Water Elements- Lake, River, Waterfall	Variety of Landscape Perspective- Close, Distant, Medium	Beautiful and Rare Plant Species	Animal Species	Cultural Sites / Historical Sites	Tourist and Infrastructure Sites (chalets)	Harmonious Sounds- the rippling of river, stream, waterfall, bird song	Delight, Elevation	Tranquility	Spiritual Uplift	Happiness, Aesthetic Pleasure	Confusion	Sadness	Fear	Indifference	Picturesqueness, Vividness, Expressiveness	Natural State, Pristine State	Stability, Sustainability	Uniqueness, Rareness (Exoticity)	Variety of Scenery	Representativeness	Vulnerability	Accessibility, Use
25	Along the way to mark 2000	View towards Kodjakaritsa	Higher Altitude of Coniferous Forest	yes	yes	yes	river, waterfall	close, distant, medium	yes	yes	no	road, derelict building	river sound, stram, waterfall, bird song	yes	yes	no	yes	no	no	no	no	high	high	high	average	average	average	low	high
26	The Radovitsa Area	Radovitsa	Alpine Landscape of Rocks, Screes and Stone Rivers	no	yes	no	no	close, medium	yes	yes	no	marking, road	river sound, bird song	yes	yes	no	yes	no	no	no	no	high	high	high	high	low	average	low	high
27	the Radovitsa River	Cliffs overlooking the Turkish Piece	Higher Altitude of Coniferous Forest	yes	yes	yes	no	close, distant, medium	yes	yes	no	marking, road	river sound, bird song	yes	yes	yes	yes	no	no	no	no	high	high	high	high	high	average	low	average
28	Bukovo Bardo	Brishi Bor, Ravna nd the Rilska River	Higher Altitude of Forests and Meadows	yes	yes	yes	no	close, distant, medium	yes	no	no	road	no	yes	yes	no	yes	no	no	no	no	high	high	high	high	high	average	low	high
29	Kalin hydroelectric power plant	Kalin hydroelectric power plant	Higher Altitude of Rare Short-stemmed forests and Bushes	yes	yes	yes	river, stream	close, medium	no	yes	no	road	river sound	yes	no	yes	yes	yes	no	no	no	high	high	high	high	average	high	high	high
30	Kalin	Above Kalin hydroelectric power plant	Higher altitude of Mixed Deciduous and Coniferous Forests	no	yes	yes	no	close, medium	yes	yes, birds	no	chalet, homes of workers	bird song	no	no	no	yes	no	no	no	no	high	high	high	average	high	average	low	average
31	Kalin	The Thessaloniki Saddle	Higher Altitude of Rare Short-stemmed forests and Bushes	yes	no	yes	no	close	no	no	no	no	bird song	no	no	no	yes	no	no	no	no	average	high	high	high	low	high	low	average
32	Kalin Dam Lake	Kalin Dam LAke	Sub-Alpine of Meadows and Dwarf-pine	yes	no	yes	dam lake	close, medium	no	no	no	road	no	yes	no	yes	yes	no	no	no	no	high	average	high	high	average	high	high	average

Appendix 6

LANDSCAPE EVALUATION BY PHOTOGRAPHS

Appendix 6.1

Aesthetic Evaluation of Landscape by Photographs

IMPORTANCE GRADING
OF THE INDICATORS FOR AESTHETIC QUALITIES OF THE LANDSCAPE PICTURE
poll results

I N D I C A T O R S	% out of total number of responses
➢ 1. All indicators	24
➢ 2. General Character of Landscape (picturesqueness, vividness)	19
➢ 3. Perspective (variety of view aspects)	13
➢ 4. Distinctness, dominance (distinct features)	11
➢ 5. Color	9
➢ 6. Proportion (scale)	7
➢ 7. Spatiality (spatial dynamism)	5
➢ 7. Silhouette Impact	5
➢ 8. Light and Shadow Effects	0,5
➢ 9. Unspecified	6.5

Appendix 6.2

Aesthetic Evaluation of Landscape by Photographs

RANKING BY LEVEL OF IMPORTANCE OF THE DEFINING ELEMENTS OF LANDSCAPE PICTURE CHARACTER poll results

DEFINING ELEMENTS OF LANDSCAPE PICTURE CHARACTER	% out of total number of responses
➢ 1. Forests	28
➢ 2. Rocks, rocky shores, stones	17
➢ 3. Relief	12
➢ 4. Expanses of Water and Flows of Water (natural and artificial)	11
➢ 5. Infrastructure (buildings, roads, routes)	11
➢ 6. Mountain Range, Mountain Ridge	9
➢ 7. Individual Trees	5
➢ 8. Flowers	4
➢ 9. Others, incl unspecified	3

Appendix 6.3

Aesthetic Evaluation of Landscape by Photographs

RANKING HUMAN IMPACT ON THE LANDSCAPE PICTURE poll results

LEVEL OF HUMAN IMPACT In landscapes with human impact elements (64% of evaluated pictures)	**%** out of total number of responses
➢ 1. Low	55
➢ 2. Medium	27
➢ 3. High	18

Appendix 6.4

Aesthetic Evaluation of Landscape by Photographs

CATEGORIZATION OF THE GROUPS OF LANDSCAPE PICTURES ACCORDING TO THEIR AESTHETIC GRADE IN RELATION TO ALL OTHER EVALUATED PICTURES

poll results

GRADE	**Sequence Number in Tables and Album**	**%** out of total number of responses
➢ 1. Exceptional	2, 4, 5, 19, 23, 27	22
➢ 2. Very High	9, 13, 14, 15, 21 22, 24, 25, 26	32
➢ 3. High	6, 7, 8, 10, 16, 28	21
➢ 4. Average High	3, 11, 12, 17, 18	18
➢ 5. Low	1, 20	7

Appendix 6.5

Aesthetic Evaluation of Landscape by Photographs

COMPARISON BETWEEN TERRAIN AND PHOTOGRAPHIC EVALUATION RESULTS OF LANDSCAPES IN RILA MONASTERY NATURE PARK.

QUALITY RANK OF EVALUATED LANDSCAPES	% OF LANDSCAPE GROUPS in relation to all evaluated landscapes according to evaluation type	
	TERRAIN	PHOTOGRAPHIC
Exceptional and Very High Quality	**53**	**54**
High Quality	**28**	**21**
Medium Quality	**19**	**18**
Low Quality	**0**	**7**

Complex Evaluation of Landscapes according to the Ranged Quality Indicators

Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	*Landscape quality indexes assessed by rate*																		
				Picturesqueness, graghic, expressiveness		**Naturalness, conservation**		**Stability, sustainability**		**Uniqueness, rarity (exoticness)**		**Landscape variety**		**Typical nature**		**Vulnerability**		**Accessibility, use**		**Complex assessment general rate**	
1	2	3	4	8	rate	7	rate	6	rate	5	rate	4	rate	1	rate	3	rate	2	rate		
1	Kalugerski Dol	The Kalugerski Dol River	Midaltitude of Deciduous Forests	high	3	high	3	high	3	medium	2	medium	2	medium	2	medium	2	high	3	**83**	high
2	Kalugerski Dol	Rila Oak	Midaltitude of Deciduous Forests	high	3	high	3	high	3	high	3	medium	2	high	3	low	1	high	3	**92**	very high
3	Kalugerski Dol	Beech Tree Forest	Midaltitude of Deciduous Forests	high	3	high	3	high	3	high	3	medium	2	medium	2	low	1	high	3	**91**	very high
4	Kalugerski Dol	Ridge across mount Tsarev	Midaltitude of Mixed Deciduous and Coniferous Forests	high	3	high	3	high	3	high	3	high	3	high	3	low	1	high	3	**96**	very high
5	Kalugerski Dol	Before Ravna	Midaltitude of Mixed Deciduous and Coniferous Forests	high	3	high	3	high	3	high	3	high	3	high	3	high	3	high	3	**90**	high
6	Below Ravna	Rock Facing Brichi Bor	Midaltitude of Mixed Deciduous and Coniferous Forests	high	3	high	3	high	3	high	3	high	3	medium	2	low	1	high	3	**95**	very high
7	Rila Monastery	Inner Yard and Back Yard	Midaltitude of Mixed Deciduous and Coniferous Forests	high	3	high	3	high	3	high	3	high	3	high	3	high	3	high	3	**90**	high
8	Fish Lakes	View towards Zlia Zab	Higher Altitude of Rare Short-stemmed forests and Bushes	high	3	medium	2	high	3	high	3	high	3	high	3	medium	2	high	3	**86**	high
9	On the way below the Water Mount	Trog Valley	Higher Altitude of Coniferous Forest	high	3	high	3	high	3	high	3	high	3	high	3	low	1	high	3	**96**	very high
10	Jenemska River	Waterfall	Higher Altitude of Coniferous Forest	high	3	high	3	high	3	high	3	high	3	high	3	low	1	medium	2	**94**	very high

Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	*Landscape quality indexes assessed by rate*																	
				Picturesqueness, graghic, expressiveness		**Naturalness, conservation**		**Stability, sustainability**		**Uniqueness, rarity (exoticness)**		**Landscape variety**		**Typical nature**		**Vulnerability**		**Accessibility, use**		**Complex assessment general rate**	
11	Peaceful Rila	Mount Yosifitsa	Higher Altitude of Coniferous Forest	high	3	high	3	high	3	high	3	high	3	medium	2	low	1	high	3	**95**	very high
12	Peaceful Rila	The Hydro	Higher Altitude of Coniferous Forest	medium	2	medium	2	medium	2	medium	2	high	3	medium	2	high	3	high	3	**63**	low
13	Along the way from the Hydro to the Smrad-livoto Lake	Fir Forest	Higher Altitude of Coniferous Forest	medium	2	high	3	high	3	high	3	medium	2	medium	2	low	1	medium	2	**81**	high
14	Along the way to Smradlivoto Lake	Before the Skrejko Spring	Sub-Alpine of Meadows and Dwarf-pine	high	3	high	3	high	3	high	3	medium	2	medium	2	low	1	high	3	**91**	very high
15	Smradlivoto Lake	Smradlivoto Lake	Sub-Alpine of Mea-dows and Dwarf-pine	high	3	high	3	high	3	high	3	high	3	high	3	medium	2	medium	2	**91**	very high
16	Above the Fish Lakes Valley	Glacial Lakes	Sub-Alpine of Meadows and Dwarf-pine	high	3	high	3	high	3	high	3	high	3	high	3	low	1	medium	2	**94**	very high
17	Fish Lakes	Fish Lakes Chalet	Sub-Alpine of Mea-dows and Dwarf-pine	high	3	high	3	high	3	high	3	high	3	high	3	high	3	high	3	**90**	high
18	The Saddleback under Mount Mermera	Illiyna River	Alpine Landscape of Rocks, Screes and Stone Rivers	high	3	high	3	high	3	high	3	high	3	medium	2	low	1	medium	2	**93**	very high
19	Along the way from the Fish Lakes Chalet to Quiet Rila	Dwarf-pine Formations	Sub-Alpine of Meadows and Dwarf-pine	high	3	high	3	high	3	high	3	high	3	high	3	high	3	high	3	**90**	high
20	Along the way from the Fish Lakes Chalet to Quiet Rila	Rilska River	Sub-Alpine of Meadows and Dwarf-pine	high	3	high	3	high	3	high	3	high	3	high	3	low	1	high	3	**96**	very high

Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	*Landscape quality indexes assessed by rate*																	
				Picturesqueness, graghic, expressiveness		**Naturalness, conservation**		**Stability, sustainability**		**Uniqueness, rarity (exoticness)**		**Landscape variety**		**Typical nature**		**Vulnerability**		**Accessibility, use**		**Complex assessment general rate**	
21	Along the way to Rilets Chalet	Under mount Mramorets	Alpine Landscape of Rocks, Screes and Stone Rivers	high	3	high	3	high	3	high	3	high	3	high	3	low	1	medium	2	**94**	very high
22	Along the way to Rilets Chalet	Mramoretsko Lake and Fish Lakes	Alpine Landscape of Rocks, Screes and Stone Rivers	high	3	high	3	high	3	high	3	high	3	high	3	low	1	low	1	**92**	very high
23	Below mt Rilets	Djendemski Lakes	Alpine Landscape of Rocks, Screes and Stone Rivers	high	3	high	3	high	3	high	3	high	3	high	3	low	1	low	1	**92**	very high
24	Along the way to Iliyna river	Turkish Piece	Higher altitude of Mixed Deciduous and Coniferous Forests	medium	2	high	3	high	3	medium	2	medium	2	medium	2	medium	2	high	3	**75**	medium
25	Along the way to mark 2000	View towards Kodjakaritsa	Higher Altitude of Coniferous Forest	high	3	high	3	high	3	medium	2	medium	2	medium	2	low	1	high	3	**86**	high
26	The Radovitsa Area	Radovitsa	Alpine Landscape of Rocks, Screes and Stone Rivers	medium	2	high	3	high	3	high	3	low	1	medium	2	low	1	high	3	**79**	medium
27	the Radovitsa River	Cliffs overlooking the Turkish Piece	Higher Altitude of Coniferous Forest	high	3	high	3	high	3	high	3	high	3	medium	2	low	1	medium	2	**93**	very high
28	Bukovo Bardo	Brishi Bor, Ravna nd the Rilska River	Higher Altitude of Forests and Meadows	high	3	high	3	high	3	high	3	high	3	medium	2	low	1	high	3	**95**	very high
29	Kalin hydroelectric power plant	Kalin hydroelectric power plant	Higher Altitude of Rare Short-stemmed forests and Bushes	high	3	medium	2	medium	2	high	3	medium	2	high	3	high	3	high	3	**73**	medium
30	Kalin	Above Kalin hydroelectric power plant	Higher altitude of Mixed Deciduous and Coniferous Forests	high	3	high	3	high	3	medium	2	high	3	medium	2	low	1	medium	2	**88**	high

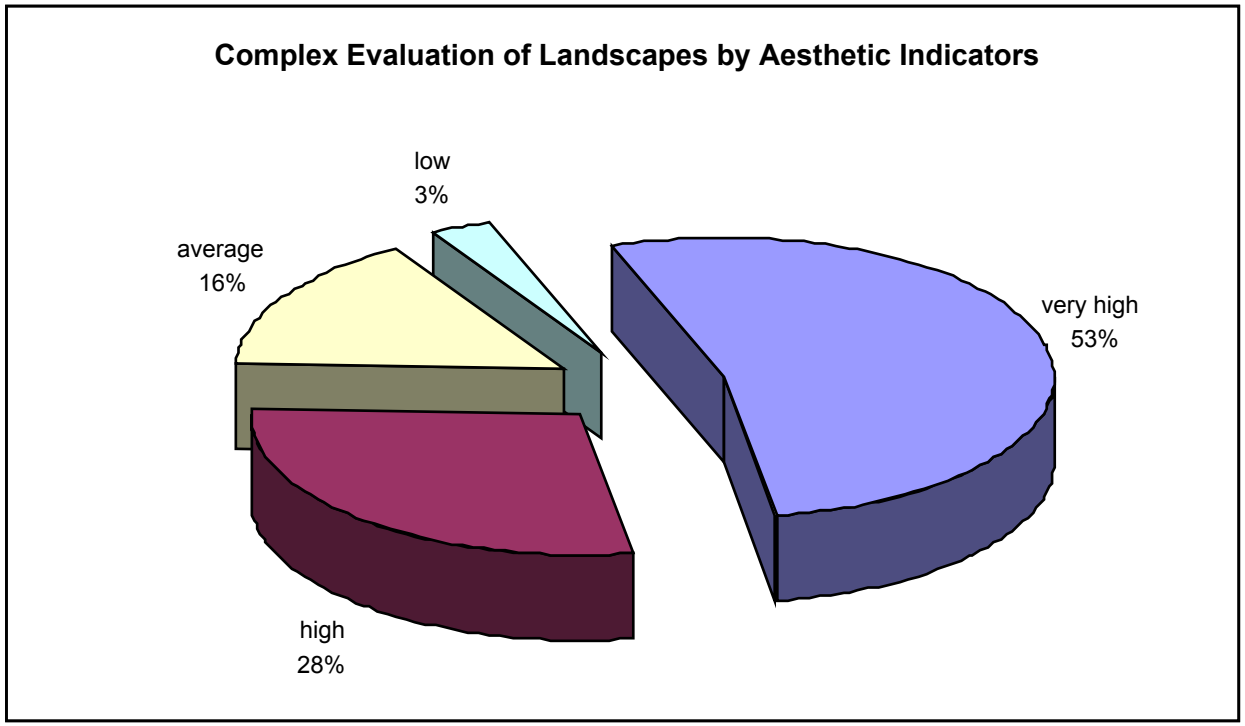
Number of Form	Research Area	Observation Spot (Vantage Point)	Type of Landscape in view of Macrorelief Specifics and Vegetation	*Landscape quality indexes assessed by rate*																	
				Picturesqueness, graghic, expressiveness		**Naturalness, conservation**		**Stability, sustainability**		**Uniqueness, rarity (exoticness)**		**Landscape variety**		**Typical nature**		**Vulnerability**		**Accessibility, use**		**Complex assessment general rate**	
31	Kalin	The Thessaloniki Saddle	Higher Altitude of Rare Short-stemmed forests and Bushes	medium	2	high	3	high	3	high	3	low	1	high	3	low	1	medium	2	**78**	medium
32	Kalin Dam Lake	Kalin Dam LAke	Sub-Alpine of Meadows and Dwarf-pine	high	3	medium	2	high	3	high	3	medium	2	high	3	high	3	medium	2	**77**	medium

Legend: 96 is the maximum rate and 24 is the minimum rate.

The rate can be distributed in to five degrees:

very high	*over rate 90*
high	*from rate 80 to 90*
medium	*from rate 70 to 80*
low	*from rate 60 to 70*
very low	*below rate 60*

very high	17
high	9
medium	5
low	1



Complex Evaluation of Landscapes by Aesthetic Indicators

low
3%

Complex Evaluation of Landscapes by Aesthetic Indicators

low
3%

Complex Evaluation of Landscapes by Aesthetic Indicators

low
3%